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ABSTRACT

Research findings can assist secondary principals in promoting instructional effectiveness. Factors influencing effectiveness include societal structure, educational goals, teachers' learning theory attitudes, and student maturity, while problem areas range from selecting instructional materials to evaluating student progress. Cases identify key research efforts and aid principals in developing checklists of essentials for supervising instruction. A first case concludes that supervision must be grounded in well-specified objectives; case 2 lists 14 teacher behaviors related to effective instruction. Case 3 notes 17 variables dramatically affecting the instructional process--among them the need for maintaining the classroom as a serious place where management tasks are routinized. A fourth case deals with a London study and again identifies variables making a difference in instructional quality, while students' test-taking behaviors is the subject of case 5. A five-part outline for teachers to use in alleviating students' test anxiety follows. Case 6 offers 34 directives for principals, and the last case deals with school violence and teacher isolation, factors inhibiting instructional progress. The paper concludes with a discussion of educational research's future, and five pages of references. (KS)

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THE NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS
ANNUAL CONVENTION
LAS VEGAS, NEVADA

SESSION TITLE; WHAT RESEARCH TELLS THE PRINCIPAL ABOUT
INSTRUCTION

DATE; FEBRUARY 4, 1984

TWO SESSIONS; 9:15-10:30 and 10:45-12:00 Noon

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NASSP ANNUAL CONVENTION-- Las Vegas, Nevada

WHAT RESEARCH TELLS THE PRINCIPAL
ABOUT EFFECTIVE INSTRUCTION

by

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February 4, 1984

Research on effective schools
has made it clear that the
individual school is the proper
unit for renewal.

--Allan Odden, Phi Delta Kappan
January, 1984

Introduction

America's schools are facing new and rigorous demands for excellence and quality. Many national reports are basically critical of public education. A Nation at Risk cites "the rising tide of mediocrity"; Action for Excellence cautions that educational improvement is crucial to "national survival"; Making the Grade plainly states "The Nation's schools are in trouble". On a more positive note, A Celebration of Teaching: High Schools in the 1980's sponsored by NASSP, TheodoreSizer, Chairman, forewarns that "Americans must restore to individual schools the lion's share of the responsibility for education."

There is also evidence that the Nation's schools are shaping up at local levels, as reported in TIME Magazine's cover story, "The Bold Quest for Quality" (October 10, 1983), due largely to grass-roots leadership, vision, and a wide range of interventions developed by local school administrators working cooperatively with school personnel and community representatives.

Controversies on the status of education bombard and impinge upon the daily work of professional educators. Solutions will not be easy. In times of confusion, the perspectives of educational philosophers may shed light on the source of problems. Professor Mortimer Adler has recently observed: "Revolutions happen, not suddenly, but after a long accumulation of grievances and awareness of defects." "This is the first time that the central matter is being discussed: teaching and learning, not civil rights or free lunches or girls versus boys."

In a given school setting, the ultimate responsibility for setting the pace in terms of values, organizational inter-relationships, decision-making, change, and most of all the effectiveness of the instructional program fall squarely on the shoulders of the local school principal, Jane Eisner has aptly referred to this phenomenon as the "principal principle"... strong, informed, projective leadership is the key. The debate rages over the work of the schools; the challenges and problems are myriad, but

there appears to be national confidence backed by research efforts that effectiveness can be achieved locally under the aegis of a school's principal.

To sum up then: the secondary school principal, aware of current research findings, can bring about change for the better in the supervision of the instructional process within a given school.

The long-acknowledged gaps among theory, research findings, and actual practice are being successfully bridged by national recognition of local school district efforts by "building" initiatives, by technical assistance agencies, well-equipped to translate research results into practical terms, and by the modern capabilities for the dissemination of research information.

This presentation will be limited to and focused upon what research tells the principal about effective instruction. Strong local leadership coupled with a management team approach and shifting administrative styles, as conditions warrant, has been recognized and stressed as the key to success in an individual school. The research-based variables that appear to facilitate effective teaching and learning will be listed out along with those conditions or factors which appear to inhibit progress in both domains, hopefully to assist administrators in their complex task of bringing about effective instruction.

Definition of Instruction

Historically, instruction is one of the oldest fields of educational investigation and study, probably because quality instruction is the single most important consideration in assessing the success of the educational process. Standard dictionary definitions of instruction and teaching imply congruence of these two terms. Both terms are defined as "imparting knowledge", "systematically". According to Lindley Stiles, clarification is possible if we begin with the term teaching and divide this activity into three phases: (1) "purpose"; (2) "means and operations", and (3) "evaluation". Some distinctions are then possible. "Purpose" suggests curriculum; "means and operations" suggest instruction; and, "evaluation" is related to outcomes or results.

With these definitions as a framework, there appear to be four key factors which influence the quality of instruction: (1) societal structure; (2) the goals or objectives of the education served; (3) the position of those who teach in regard to learning theory; (4) the maturity level of the students who are to be taught. In a democratic country, there is emphasis upon interaction among and between students, teachers, parents, and community. General and specific objectives or outcomes of the instructional process are as lodestars which determine the choice of procedures. Teachers vary markedly in respective acceptances of learning theory. This will often determine

the route of the instructional process. The developmental level of students will also influence the choice of instructional patterns which the teacher employs.

In general, the most widely accepted notion of the function of instruction is the development of "competence" in the ways and means, the skills and tools of learning. Research has identified some of the major problem areas relating to instruction, viz. (1) choice and selection of instructional materials and resources; (2) the relevant and efficient use of such materials; (3) strategies for teaching (group and individual procedures); (4) diagnosis, prescription, and remediation; (5) directing individual study; (6) evaluating and reporting student progress (Stiles).

It should be carefully noted that evaluation is an integral part of the instructional process--should be continuous, on-going, and, of course, global in perspective. Using techniques of immediate informal feedback to students on their accomplishments coupled with more formal means of assessment will provide the student with specific evidences of strengths or weaknesses, and should be fruitful grounds for stimulating motivation to learn. Oral question and answer procedures, recitation, self-appraisals, and group evaluations should provide cues and clues to the success of the instructional process and also contribute to the personal and social adjustment of students in the classroom.

Educational Research on Instruction and the Principal

Research on the evaluation of instruction and the role of the principal as a key figure is overwhelming in both quantity and quality. Selected key research efforts related to instruction will be and reported by CASES. Credit will be given to the long roster of researchers by groups and clusters.

It is anticipated that these specific research findings will be suggestive of a set of criteria which the principal may want to use in developing a local check list of essentials for the observation and supervision of the instructional process. By no means are the summaries or listings prescriptive, but are research-based answers to the question: What does Research tell the Principal About Effective Instruction?

Case 1: School Survey

In a recent survey conducted by Stephen M. Yak, Superintendent of the Kiski, Pennsylvania, Area School District, it was reported that secondary principals devote approximately forty-three percent (43 %) of their time supervising instruction, but there appeared to be little relationship between time spent on supervision and student achievement.

In the recommendations of his report, Dr. Yak suggested that secondary principals might well take note of research findings relative to effective instruction (teaching and learning), namely, that supervision ought to be done

systematically by well-specified objectives, that pre-observation conferences with teachers be held clarifying the objectives beforehand, that student evaluation of teachers be done regularly and summarized, and that teachers, too, should have the opportunity to evaluate their supervisors (principals, assistant principals) in the interests of improving student performance in the long run.

Case 2: The Teacher & School Effectiveness

In a video tape entitled: The Teacher and School Effectiveness (ASCD, North Washington Street, Alexandria, Virginia 22314, 1981), fourteen (14) teacher behaviors related to effective classroom instruction are identified. These behaviors were abstracted from the research work of: Barak Rosenshine, the late Ronald Edmonds, Donald Medley, Peter Mortimore, and Kathy Schaub.

1. Superior Knowledge of subject matter: The teacher has a good mastery of the subject(s) taught.
2. High Expectations: The teacher expects all students to do well and to meet standards set.
3. Use of Praise: The teacher uses praise more than criticism.
4. Classroom Management: The teacher spends less time in classroom management.
5. Class vs. Individual Instruction: The teacher teaches to the class as a whole or to large groups.
6. Seatwork: The teacher uses less seatwork, but monitors closely what is given.
7. Teacher Directed: The teacher selects activities and directs students accordingly.
8. Modeling: The teacher models what is to be taught; demonstrates.

9. Questioning: The teacher uses easy questions with a high success rate intended; directs questions to specific students, not volunteers.
10. Mastery: The teacher does not "move on" until the material in a unit is learned.
11. Planning: The teacher uses detailed lesson plans with a variety of activities to assure high time-on-task.
12. Structuring Comments: The teacher spends part of each period preparing students for learning.
13. Criterion Material: Class material presented by the teacher is matched to curriculum guides and to the testing or assessment portion of classwork; class time has functional relevance.
14. Probing: Teacher responses encourage students to elaborate or expand on answers given.

Case 3: Variables that make a difference

In a comprehensive analysis of variables that make a difference in student achievement, The Midwestern Regional Office (Evanston, Illinois 60201) of the Educational Testing Service (ETS) has prepared an annotated bibliography covering the research abstracts of the following investigators: Wilbur Brookover, Benjamin Bloom, D.C. Berliner, Jere Brophy, C.Clark, Ronald Edmonds, W. James Pophsm, Barak Rosenshine, Jane Stallings, M. Rutter, Lawrence Lezotte, and many others. Among these researchers, there is agreement that the following list of variables or principles have a dramatic effect on the instructional process; however, it must be pointed out that many of these variables are interrelated and may only lead

to achievement increments if employed in combination. Also included here is the work of Jason Millman, Margaret Wang and Herbert Walberg.

1. Classroom objectives are clearly defined for the students; learning tasks are directly related to general objectives (term, semester) and specific objectives (unit, weekly, daily)
2. Students receive immediate feedback on their own progress through careful monitoring of what has been and what needs to be learned.
3. Student academically engaged Time-on-Task is high; off-task time is held at a bare minimum (waiting for instructions, overcoming interruptions). Rewards may increase the time that learners will spend on tasks, but not the degree or rate of learning. (Millman) The important question is how the time is used.

Students may be more often off-task when engaged in prescriptive activities and assigned work and more often on-task when engaged in student selected, exploratory, group interactive activities, and self-initiated tasks.

4. Disruptive behavior was often associated with solitary prescriptive activities as well as managerial and student-initiated interactions with teachers-- waiting was associated with teacher-student interactions. Active teaching, student choices and initiatives are associated with effective time use. (Wang)
5. The teacher directs classroom instruction; frequent large group instruction; some small group instruction; teacher time is not spent with one or two students; teacher is business-like and clear with respect to class management.
6. Classroom instruction is structured, sequenced--from simple to complex; from concrete to abstract.
7. Instruction among students is not differentiated; all students are involved and respond correctly and positively with equal frequency; low achievers are not given easier questions or tasks; shades of ability grouping are not in evidence.
8. The classroom is a serious place where management tasks are routinized; effective discipline is maintained; rules and procedures are clearly understood by all; little disruptive behavior is in evidence.

9. Students receive constant reinforcement; are praised for successful completion of tasks; praise outweighs strong criticism.
10. Teachers' enthusiasm as a dimension of non-verbal behavior (gestural, facial, and movement aspects of a teacher's instruction may well communicate messages and motivate students to stay on-task. (Bettencourt, et al).
11. The greater the amount of parental involvement or "press for achievement", the greater the achievement. Parents can make a contribution to the amount of time spent on task by supplementing classroom instruction at home, thereby increasing the time on task.
12. High expectations on the part of the principal are associated with greater student achievement. Assertive instructional leaders (principals) must make explicit their expectations by establishing concrete norms and goals for both teachers and students. This would involve setting goals; having a hand in formulating procedures for the evaluation of achievement through agreement with teachers. In less direct ways, principals could make more classroom visitations, provide more in-service staff training. Research has shown that even disregarding principals' attitudes, the greater the in-service training, the greater the success of the instructional program.
13. Higher student achievement gains are associated with a high degree of structure in the classroom. This does not imply rigidity on the part of teachers but rather clear direction. Student choices for learning activities may be approved after basic learning tasks have been accomplished.
14. Intra-group cooperation and inter-group competition has been shown as having a positive impact upon achievement motivation and interpersonal skill development.
15. Tutoring, whether by adults, older students, or same-age peers may bring about better achievement. This approach builds upon the concept of the "extended family".
16. Recitation promotes achievement gains in both the acquisition and retention of knowledge, and provides opportunity for the teacher to monitor students' understandings instantly.
17. The use of factual questions by a teacher as the starting point often "warms up" a class and lays the groundwork for follow-up questions in the higher

cognitive domains (stating solutions, making predictions, providing interpretations or recognizing principles).

Case 4: International Study

From an international vantage point, Michael Rutter's *Fifteen Thousand (15,000) Hours (Secondary Schools and Their Effects on Children)* presents research data to refute the arguments of the Coleman report--that schools do not make a difference. Rutter's study was conducted in twelve (12) inner-city schools in London. These schools were much like those found in any large United States' city--achievement was low, family incomes were modest if not low, there were substantial proportions of minority students. After controlling for poor attendance, delinquency, scholastic aptitude, and proneness to violence, the following variables related to instruction were identified as making a difference in the quality of schooling:

- (1) Those schools with academic emphasis (high expectations communicated to children, homework assigned and corrected, hours per week devoted to instruction, use of the library, and "head-master" leadership) were better.
- (2) Teacher actions in instruction (time on task, class not individual approaches, and "quiet work") made a positive difference.
- (3) Student participation in instruction (large numbers, not a chosen few) made schools better.
- (4) School organizational factors (pre-planning with the direct involvement of the head master, specificity of the curriculum-- objectives clearly stated) made schools better.
- (5) Praise, rewards (stress on praise for all students) seemed to account for better instructional outcomes.

These findings appear to cross-validate those features of classroom instruction which are related to academic success.

Case 5: Test Taking Behaviors

Effective instruction is linked to students' abilities to do well on standardized tests, state assessment devices, and/or teacher-made tests. Often overlooked is the problem of student test-taking behaviors, specifically, test anxiety which may dramatically affect test scores. Recognizing this phenomenon, the principal might well direct teachers also to take note of the necessity for teaching students test-taking skills thus to reduce the anxiety which will often short-circuit test results.

Test anxiety has been seriously studied for over two decades. Recommendations for remediation are myriad in the research literature, but, unfortunately appropriate measures to alleviate test anxieties have not been translated into everyday practice. By definition, test anxiety has been defined as a personal anticipation of "danger, harm and inability to meet challenges" associated with educational experiences.

The following interventions have been suggested by comprehensive research and reported by Irwin Sarason (1983).

1. Reassurance: Encourage the individual student to focus upon the task at hand and not to worry about one's own performance level.
2. Modeling: Opportunity to observe someone coping with a task may provide clues to solving problems that may have existed for years in a student.

3. Attentional training: Skill at attending to the task at hand--an important dimension of self-discipline is necessary.
4. Self-monitoring: Students can be taught to monitor and control their own behavior and thoughts.
5. Relaxation: Teaching students how to relax under given conditions is essential.
6. Practice and reinforcement: Students should be given test practice time thus simulating the real testing situation (experience in multiple choices, true false items.)
7. Information: Student maladaptation may be rooted in lack of information about study and test-taking skills (lessons on test taking strategies.)
8. Social support: Students should be made to feel that they are part of a mutually supportive group focused upon a task thus to inhibit self-preoccupation. (Study groups).

In general, a test-anxious person creates his own problem by centering upon his own perceived inadequacies ("I'm stupid." "What if I fail this examination?")

Following is an informal outline designed for teachers to use in discussion with secondary students to alleviate the stress of facing a quiz, test, or examination situation. Research-based, this summary was developed by the Research and Evaluation Department of the Detroit Public Schools.

GENERAL TEST-TAKING STRATEGIES¹

(For Discussion With Students)

A. TIME-USING STRATEGIES

- a. Set up a schedule for progress through the test.
- b. Begin to work as rapidly as possible with reasonable assurance of accuracy.
- c. Answer easier questions first.
- d. Omit or guess at items which resist a quick response.
- e. Mark omitted items, or items which could use further consideration, to assure easy relocation.
- f. Use time remaining after completion of the test to reconsider answers.

B. ERROR-AVOIDANCE STRATEGIES

- a. Pay careful attention to directions, determining clearly the nature of the task and the intended basis for response.
- b. Pay careful attention to the items, determining clearly the nature of the question.
- c. Ask examiner for clarification when necessary, if it is permitted.
- d. Check all answers.
- e. Remember to select the correct alternative, identify the alternative choice and item number. Transfer this information from the test booklet (if necessary) to the answer sheet.

C. GUESSING STRATEGY

- a. You may guess if right answers only are scored.
- b. Never guess if the correction for guessing is more severe than a scoring that gives an expected score of zero.

¹ This outline was prepared by the Research and Evaluation Department, Detroit Public Schools, 1980.

- c. Always guess even if a severe penalty for guessing is employed, whenever elimination of options provides sufficient chance of success.
- d. Don't make wild guesses. Many times you can get the answer by a process of reasoning and elimination of answers.

D. PHYSICAL AND EMOTIONAL READINESS

- a. Develop a good attitude toward the exam. To do well on an exam, you must think positively. Put everything else out of your mind and think only of doing well on the test.
- b. Don't panic. Feel confident, this comes from preparing yourself for the test.
- c. Get plenty of sleep the night before the test. "Cramming" at the last minute is an ineffective approach to taking a test.
- d. Have a good meal before leaving the house. You will need a good protein breakfast to keep you alert during the test.
- e. Be on time. Get up early enough so that there will be no need to rush.
- f. Go into a test situation alert but calm.
- g. Try to develop a positive attitude about your ability to perform well on a test.

E. MISCELLANEOUS TIPS

- a. Do not hesitate to change an answer, if you feel you should.
- b. Examine carefully all possible responses before attempting to choose the correct answer.
- c. Use relevant content information in other test items and options.
- d. Concentrate attention to test relevant matters while directing attention away from self-evaluation.
- e. Tackle each item, one at a time, rather than aiming for the whole test.

Case 6: Summary What Can A Principal Do?

The following suggestions research-based, may provide directions for the Principal:

Planning Phase

1. Develop a model of goals for the clinical supervision of instruction to be used in classroom observations.
2. Increase the number of teacher-classroom observations per semester or year.
3. Work cooperatively with planning teams composed of department heads and teachers for the development of clear and precise long-range (general) and short-range (specific) instructional objectives based upon real and perceived needs.

Context for Assessment of Instruction

4. Make sure that classrooms are "clean, well-lighted" places for learning.
5. Encourage classroom displays to be current, to reflect the work of learning unit developed cooperatively by teachers and students.

Observing Instruction

6. Emphasize and provide for in-service training.
7. Oversee the development of course syllabi by each and every teacher--stemming from previously stated educational objectives; randomly review lesson plans.
8. Insure the assignment of homework to students on a daily basis.
9. Introduce teachers to innovative teaching strategies.
10. Encourage teachers to take the time to work with students on test-taking skills.
11. Insure feedback to students and parents on test results (teacher-made or standardized).
12. Check on teacher's "attendance taking styles".
13. Make certain that emphasis on the basic skills (reading, writing) accompanies all student work; accuracy and neatness are insisted upon.

14. Teacher preparation for the lesson (knowledge of subject matter); planning put into practice.
15. Questioning methods; evidence of "probing".
16. Amount of time spent on routines off-task.
17. Amount of time on task; how time is spent.
18. Evidence of teacher expectations.
19. Use of praise or criticism; evidence of learning reinforcement.
20. Class vs. individual instruction; seatwork; large group instruction is preferred.
21. Method of selection of learning activities; exclusively teacher choice, student choice, or a combination.
22. Sequencing of learning concepts.
23. Class participation--all students or just some.
24. Classroom identification of students with special talents, or of those with special needs or skill deficiencies.
25. Evidence of peer-tutoring.
26. Movement of the class toward mastery of subject matter.
27. Teacher's body language, enthusiasm--effect on student attention and learning.
28. Teacher's clarity of presentation--teacher can be heard and understood.
29. Level of class attention; little evidence of disruptive behavior.
30. Record keeping of student work is carefully managed.
31. Variety of instructional strategies is present to attract students with a variety of learning styles.
32. Insure a climate whereby the complexities of instruction may be discussed with colleagues and administrators.
33. Guide beginning teachers in their quest for instructional effectiveness.

34. Develop avenues for keeping abreast of current research findings; use results to improve daily instructional practice.

Several studies of the principal's time indicate that there are many chances for the principal to become deeply involved in the instructional program either formally or informally and most particularly if general and specific supervisory objectives are carefully and clearly articulated beforehand.

Case 7: Factors Inhibiting Instructional Progress

Two phenomena which are of concern on the national educational scene may be viewed as negative factors influencing instruction. They are: (1) violence in the schools; and (2) teacher isolation.

There appears to be evidence that school disorders are diminishing according to Scott Thomson, Executive Director of the NASSP, who, quoted in a recent issue of TIME magazine (January 23, 1984), stated that discipline problems are "nowhere near as bad as they were five years ago--there has been an important swing in student and parent attitudes." The relationship of student violence to instruction was succinctly summarized by Principal Walter Harris (Ribault Senior High, Jacksonville): "Once the students found they could improve academically, they improved their self concept and discipline." This change was related, according to Harris, to the fact the school's academic standards were

raised. While scenes of disruption still plague the Nation's schools, stress on schools as a place of learning seems to alleviate conditions of unruly student behavior.

The other more subtle factor affecting positive change is the phenomenon of teacher isolation identified in A Study of Schooling (John Goodlad) and reported by Tye and Tye in a recent issue of the Phi Delta Kappan. Secondary teachers polled reported that while they had attended in-service subject matter workshops, read books in professional education, and were members of professional organizations, but they found new information on new strategies of "little value"; saw minimal linkage between outside knowledge and the everyday work of the classroom.

This study hypothesized that there would be evidence of within school linkage, but this hunch went unsupported. Teachers questioned stated that they received very little help from school administrators, from fellow teachers; had very infrequent contacts with principals on problems of curriculum and instruction.

In general, teachers felt isolated in their classrooms, quite in charge of happenings and quite satisfied with the situation, were not keen on more shared leadership, wanted to teach as they were taught. Apparently, in view of managerial concerns on the part of principals, teachers have been permitted to go their own ways and do not much object to rather meager lines of principal-faculty communication and openness.

Futures for Educational Research

In a democratic philosophy of education, schools should provide opportunities for each and every individual to reach the zenith of potentiality. Quite conversely, however, schools have tended to stretch individuals over the same last, to judge or place individuals in terms of "averages" which along with other measures of Central Tendency are fictitious indexes and do not do justice to the person.

Principles of learning have been identified since the days of Wilhelm Wundt in his psychological laboratory in Leipzig in 1879, but translations to practice have not been satisfactory.

The schools of tomorrow and instructional programs might well be guided by well-known principles which give the individual full attention. Modern technology is available to generate profile analyses for purposes of maximizing growth over the four (4) principles listed below. Quite naturally, research efforts might be derived from these considerations:

Principle I-Individual differences: Differences between people which ought to be reported on stretches of a choice of various scales (quartiles, quintiles, deciles)-- but not averages.

Principle II-Trait differences: Differences within people should each be identified in terms of statistical moments (means, standard deviations, skewness, kurtosis) for purposes of classifying the person according to high and low standings in such areas as aptitude, achievement, interests, emotional and social adjustment, critical thinking capabilities, creativity, and other human dimensions. Global profiles of people not single indexes should be used.

Principle III-Rate of growth: Differences in the maturation rates of people, whether slow-fast, by leaps and bounds, by spurts followed by a leveling off-ought to be determined for each student.

Principle IV-Aspirations: Differences in the aspirations of people, according to experience, interests, exposures, associations, selection of role models, personal goals, expectations, desires, dreams should be assessed for each individual. (Wm. Reitz and John Lindsey)

Data from these four areas ought to be gathered by inventory, testing, and profile analysis to pre-determine just where the individual is. Programs, instruction, and activities should be tailored to meet needs and to realize maximum integrated development-- to capitalize upon the strengths and not to fit the learner into the fabled iron Procrustean bedstead --to bring about conformity at any cost.!

This is perhaps one of the paradoxes of schooling in America---to know that student-people are different and still to use mass methods of assessment.

Research on the instructional process has a long way to go, and, unfortunately, studies extant pertain more to elementary levels than to secondary education. It would be ideal if secondary principals would initiate their own Classroom Research (also called "Field Research") to shed light on local school problems. Methodological cues were provided by Professor Stephen Corey, Columbia University, more than two decades ago, under the name of Action Research.

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